

Appl. No. 09/463,001
Amdt. dated May 18, 2004
Reply to Office action of December 18, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-9 (canceled).

10. (currently amended) A composite material comprising at least one layer containing a thermoplastic, the layer having embedded therein a fabric, the fabric being coated with an active thermal protective material selected from the group consisting of subliming materials and intumescing materials, the active thermal protective material leaving openings in the weave of the fabric, the thermoplastic material extending into the openings and forming a physical lock with the coated fabric.

11. (currently amended) The composite of claim 10 wherein the coated fabric comprises an open mesh having from 0.5 to 30 openings per square centimeter, ~~the thermoplastic in the layer extending into the openings and forming a mechanical lock with the coated fabric.~~

12. (original) The composite of claim 10 wherein the fabric comprises fiberglass fiber having a softening point above about 850° C.

13. (canceled)

14. (currently amended) A container formed essentially of the composite of claim 10 a composite material comprising at least one layer containing a thermoplastic, the layer having embedded therein a fabric, the fabric being

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coated with an active thermal protective material selected from the group consisting of subliming materials and intumescing materials.

15. (original) The container of claim 14 wherein the container is a structural automotive container selected from the group consisting of trunk bases and fuel tanks.

16. (previously presented) A structural automotive component having a bottom and an upstanding wall, the component being formed of the composite material of claim 10.

17. (previously presented) The component of claim 16 wherein the fabric is on a lower side of the bottom and the outside of the upstanding wall.

18. (previously presented) The component of claim 17 wherein the fabric is a single piece of material extending across the bottom and up at least a part of the upstanding wall.

19. (original) The component of claim 16 wherein the fabric comprises fiberglass fiber having a softening point above about 850° C.

Claims 20 and 21 (canceled).

22. (original) The component of claim 16 wherein the component is a trunk base.

23. (original) The component of claim 16 wherein the component is a fuel tank.

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24. (previously presented) The component of claim 16 wherein the component is an inverted pan formed in part of thermoplastic-coated fibers, the fabric being embedded in an inside surface of the pan.

25. (original) A method of forming a composite structure comprising a step of coating a fabric with an active thermal protective material selected from the group consisting of subliming and intumescent materials, and thereafter a step of softening a resin component of a substrate and embedding the coated fabric in the softened resin.

26. (original) The method of claim 25 wherein the substrate is a sheet, and wherein the sheet and the fabric are formed into a structure simultaneously with the step of embedding the fabric in the sheet.

27. (original) The method of claim 25 wherein the active thermal protective material leaves openings in the weave of the fabric, the softened resin extending into the openings and forming a physical lock with the coated fabric.

Claims 28-34 (canceled).

35. (currently amended) A molded structure comprising an organic resin having embedded therein a fabric, the fabric being precoated with an active thermal protective material selected from the group consisting of subliming and intumescent materials.

36. (original) The structure of claim 35 wherein the organic resin is a polyolefin.

Claims 37-40 (canceled).

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41. (original) A method of forming a composite structure comprising a step of treating a fabric with an active thermal protective material selected from the group consisting of subliming and intumescent materials, a step of placing the treated fabric in a mold, and a step of forming a substrate into a shape in the mold containing the treated fabric.

42. (original) The method of claim 41 wherein the substrate comprises a thermoplastic resin, the step of forming the substrate comprising heating the resin at least to a softening temperature, the treated fabric bonding to the softened resin.

43. (original) The method of claim 41 wherein the substrate is heated to a temperature below an activation temperature at which the active thermal protective material intumesces or sublimes.

44. (original) The method of claim 41 wherein the fabric comprises fiberglass.

45. (original) The method of claim 41 wherein the substrate comprises a felted material.

46. (previously presented) The method of claim 41 wherein the treated fabric includes openings therein, the substrate extending through the openings to lock the treated fabric to the substrate.

47. (original) The method of claim 41 wherein the structure is an automotive trunk base, or trunk liner, or fuel tank.

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48. (previously presented) The method of claim 42 wherein the resin comprises a polyolefin.

49. (previously presented) A composite structure comprising a substrate, the substrate being formed at least in part of a thermoplastic material, and a thermal protective structure adhered to the substrate, the thermal protective structure comprising a fabric coated with an active thermal protective material, the thermal protective material being selected from the group consisting of subliming and intumescing materials, the substrate adhering chemically and mechanically to the pretreated fabric.

50. (original) The structure of claim 49 wherein the thermal protective structure is adhered to the substrate by the thermoplastic material.

51. (original) The structure of claim 49 wherein the thermal protective structure is embedded in the thermoplastic material.

52. (previously presented) A composite structure comprising a substrate, the substrate being formed at least in part of a polyolefin, and a mesh fabric treated with an active thermal protective material, the thermal protective material being selected from the group consisting of subliming and intumescing materials, the treated mesh fabric having from 0.5 to 30 openings per square centimeter, the substrate adhering chemically and mechanically to the pretreated mesh fabric.

53. (original) The structure of claim 52 wherein the polyolefin is polypropylene.

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54. (new) A method of forming a composite structure comprising a step of coating a fabric with an active thermal protective material selected from the group consisting of subliming and intumescing materials, the coating step leaving openings in the coated fabric, and thereafter a step of causing a resin component of the composite structure to pass through the openings and form a mechanical lock with the coated fabric.

55. (new) The method of claim 54 including a subsequent step of hardening the resin.